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A new species of *Arachnophora* from submerged wood in the Amazon rainforest, Brazil

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Abstract — *Arachnophora combuensis* sp. nov. is described and illustrated from specimens collected on submerged wood from Combu Island (Belém municipality, Pará, Brazil) in the Amazon rainforest. The fungus is characterized by simple pale brown conidiophores, monoblastic percurrently extending conidiogenous cells, and staurosporous conidia with a pale brown basal cell and 2–3 dark brown central cells that bear 1–3 conical pale brown arms. The new species is compared with morphologically similar taxa.

Key words — taxonomy, freshwater fungi, tropics

Introduction

During a mycological survey of conidial fungi occurring on submerged decaying plant materials from the Amazon rainforest in Brazil, an interesting fungus was collected on submerged wood. Its conidiogenesis and conidial features clearly suggest placement within the genus *Arachnophora* Hennebert (Hennebert 1963). However, the fungus shows remarkable differences from all previously described *Arachnophora* species and therefore is described as new to science.

Material & methods

Samples of submerged litter were placed in paper and plastic bags, taken to the laboratory, and treated according to Castañeda-Ruiz (2005). Mounts were prepared in PVL (polyvinyl alcohol, lactic acid, and phenol) and measurements were taken at ×1000.

Micrographs were obtained with an Olympus microscope (model BX51) equipped with bright field and Nomarski interference optics. The type specimens are deposited in the Herbarium of Universidade Estadual de Feira de Santana (HUEFS).

Taxonomy

Arachnophora combuensis J.S. Monteiro, R.F. Castañeda & Gusmão, **sp. nov.** Fig. 1

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Differs from *Arachnophora crassa* by its wider conidial central body and fewer, larger conidial arms and from *A. pulneyensis* by its wider conidial central body separated from the conidiogenous cell by a basal cell.

Type: Brazil, Pará State, Belém, Área de Proteção Ambiental Ilha do Combu, 1°25'S 48°27′ W, on submerged wood, 10 Jan. 2013, coll. J.S. Monteiro (**Holotype**: HUEFS 196432).

Etymology: Latin *combuensis* refers to the island where the type specimen was collected.

Colonies on the natural substrate effuse, hairy, dark brown. Mycelium superficial and immersed. Hyphae branched, septate, smooth, pale brown, 2–4 µm wide. Conidiophores macronematous, mononematous, simple or with one branch, erect, straight or slightly flexuous, cylindrical, 3–4-septate, smooth, pale brown, 87.5–225 × 5–7.5 µm; branches cylindrical, 1–2-septate, smooth, pale brown, 27.5–60 × 6–7.5 µm. Conidiogenous cells monoblastic, integrated, terminal, cylindrical, with enteroblastic percurrent extensions, smooth, pale brown. Conidial secession rhexolytic. Conidia acrogenous, solitary, staurosporous, 42–50(–60) × 13–16 µm, composed of a basal cell that is conical, smooth, pale brown, 7–14 × 5–11 µm, with a tapering base bearing remains of the conidiogenous cells, 2–3 µm wide; 1–2(–3) central cells that are dark brown, smooth, 7–21 × 9–16 µm; 1–3(–4) arms that are conical, 1-septate, 12–30 × 5–11 µm, with a pale brown basal cell, 6–15 × 5–11 µm and a pale brown distal cell, 7–19 × 3–6 µm. Synanamorph *Selenosporella*-like, present at the tip of conidial arms, producing conidia sympodially, aseptate, fusiform, straight, hyaline, 3–5 × 0.5–1 µm.

Additional specimen examined: **BRAZIL**, **Pará**, Área de Proteção Ambiental Ilha do Combu, 1°25'S 48°27′W, on submerged wood, 10 Jan. 2013, coll. J.S. Monteiro (HUEFS 196433).

Note: *Arachnophora* is typified by *A. fagicola* Hennebert, which was collected from decaying cupules of *Fagus sylvatica* in Belgium (Hennebert 1963). The genus comprises nine species characterized by monoblastic integrated percurrently extending conidiogenous cells that produce staurosporous conidia with dark central cells and paler septate incurved arms (Révay & Gönczöl 1989, Castañeda-Ruiz et al. 1996, 1997, Castañeda-Ruiz & Guarro 1998, Pratibha et al. 2011, Leão-Ferreira et al. 2013, Ma et al. 2013). Among the described

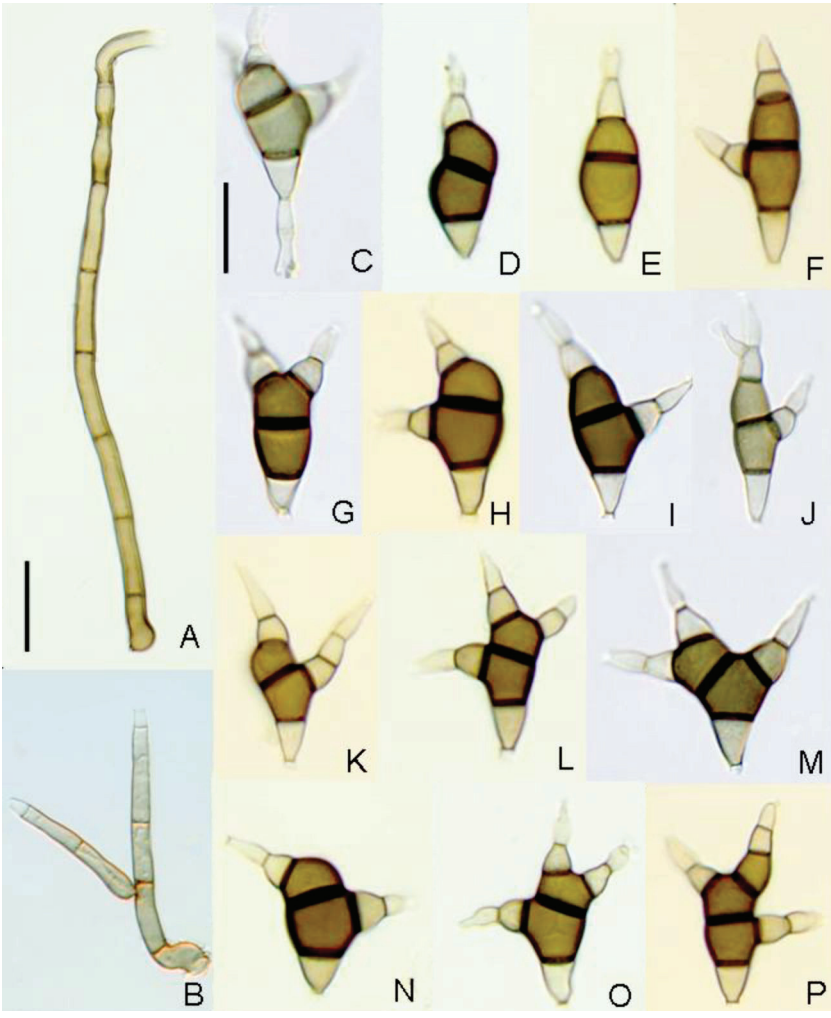

Fig. 1. *Arachnophora combuensis* (holotype, HUEFS 196432). A–B. Conidiophores. C. Conidiogenous cell attached to a conidium. D–P. Conidia. Scale bars: A–B = 30 µm; C–P = 20 µm.

species only *Arachnophora crassa* Révay & J. Gönczöl and *A. pulneyensis* (Subram. & Bhat) R.F. Castañeda are morphologically similar to *A. combuensis*. *Arachnophora crassa* is distinguished by conidia with 5–7 arms measuring 9–14.5 × 5–6.5 µm and a two-celled central body of 16–22.5 × 8–9.5 µm (Révay & Gönczöl 1989). *Arachnophora pulneyensis* differs from *A. combuensis* by the

sizes of the central body (16–24 × 6.5–8 µm) and conidial arms (14 × 3–5 µm) and the absence of a basal cell (Castañeda-Ruiz et al. 1996).

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